

Date=01/09/2020

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Subject ⇒ Operating System

IN PREVIOUS LECTURE (QUICK RECAP) Date-28/08/2020	In Today's Lecture (Overview)
<a href="#">Depth First Search or DFS for a Graph</a> <a href="#">MCQs</a> <a href="#">Questions for Self Practice</a>	<a href="#">What is operating software?</a> <a href="#">Why Programming Directly On Hardware Is Not possible?</a> <a href="#">Functions of Operating System</a> <a href="#">What is kernel In operating system</a> <a href="#">Functions of a Kernel</a> <a href="#">What Is System Calls</a> <a href="#">Mcqs</a> <a href="#">Questions for Self Practice</a>

## What is operating software?

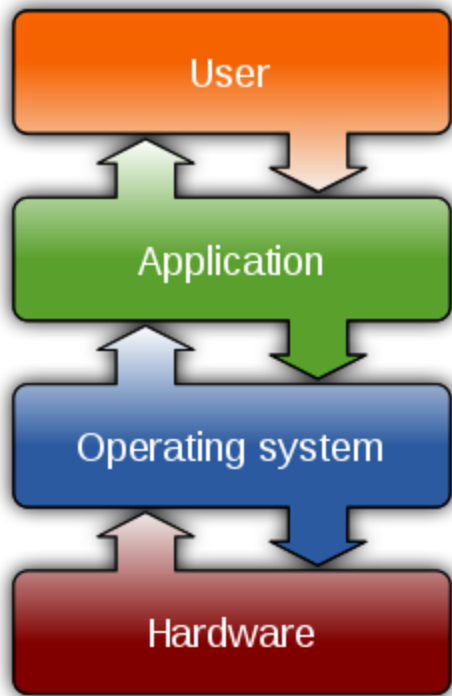
An operating system (OS) is system software that manages computer hardware, software resources, and provides common services for computer programs.

Time-sharing operating systems schedule tasks for efficient use of the system and may also include accounting software for cost allocation of processor time, mass storage, printing, and other resources.

For hardware functions such as input and output and memory allocation, the operating system acts as an intermediary between programs and the computer hardware,[1][2] although the application code is usually executed directly by the hardware and frequently makes system calls to an OS function or is interrupted by it. Operating systems are found on many devices that contain a computer – from cellular phones and video game consoles to web servers and supercomputers.

In short

Operating System is a bridge between User and the hardware



## Why Programming Directly On Hardware Is Not possible?

### 1.Varying Specs

=Every Pc Has Different Specs like Different Software different screen ..etc

- ⇒ Different Architectures
- ⇒ Different Builds of PC/laptops
- ⇒ Different Versions Of Pc\Laptops

### 2.Pc/Laptop Only understands Binary language

= Pc\laptop only understands Binary language(0 and 1) so it becomes very difficult To program on hardware directly

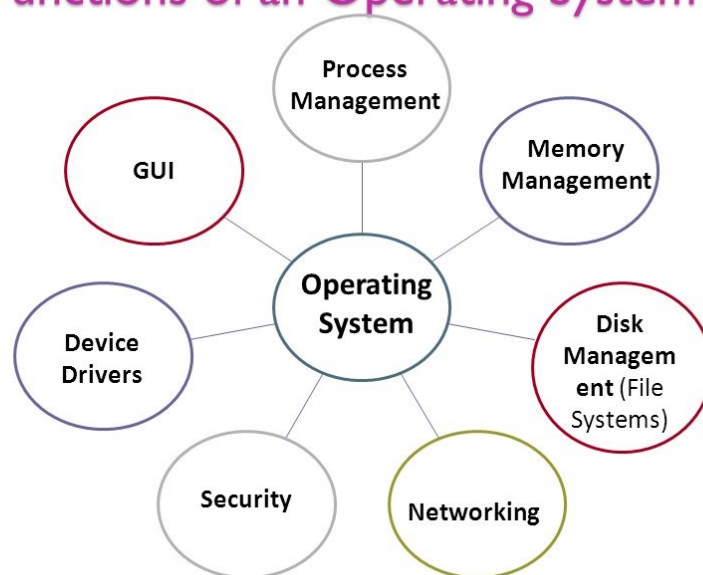
- ⇒ Debugging

# Functions of Operating System

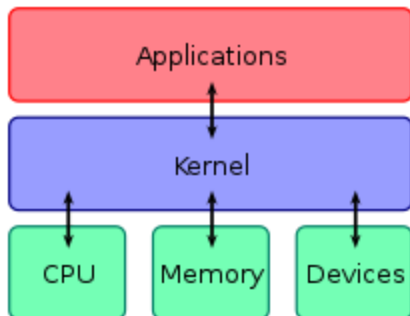
=Given Below are the Functions of Os

- It makes easy to program on hardware
- efficient utilisation of resources
- run multiple programs Simulately
- Security
- Control over system performance
- Coordination between other software and users
- Memory Management
- Processor Management
- Device Management

## Functions of an Operating System



# What is kernel In operating system



=The kernel is a computer program at the core of a computer's operating system with complete control over everything in the system. It is an integral part of any operating system. It is the "portion of the operating system code that is always resident in memory"

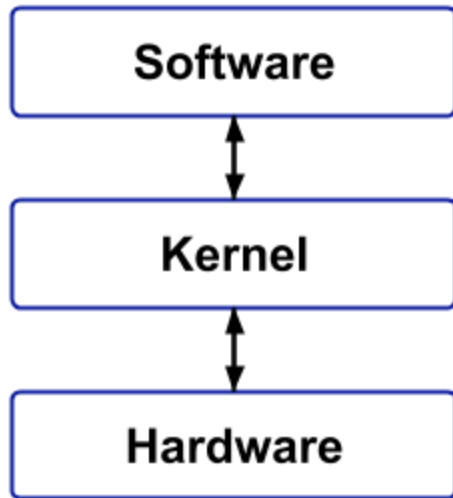
## Functions of a Kernel

⇒ Following are the functions of a Kernel

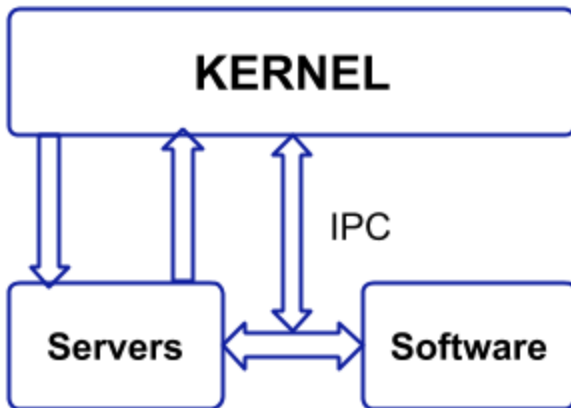
- Access Computer resource
- Resource Management
- Memory Management
- Device Management

Types of Kernels;

### 1. Monolithic Kernels



### 2. Microkernel



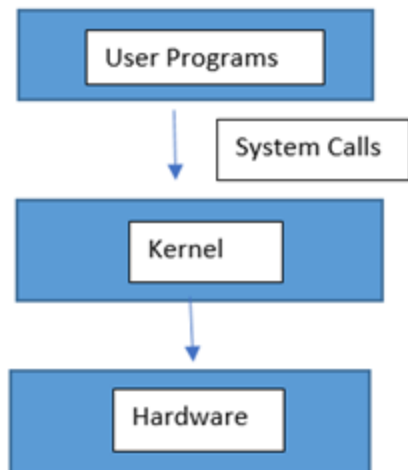
### 3. Hybrid Kernel

### 4. Nanokernel

### 5. Exokernel

# What Is System Calls

⇒ In computing, a system call is the programmatic way in which a computer program requests a service from the kernel of the operating system on which it is executed



## Mcqs

**1.What is the central unit of an OS called?**

A=kernel

B=core

C=crux

**2.Kernel interacts with hardware units through?**

A=applications

B=Drivers

**3.A kernel can be....**

A=monolithic

B=microkernel

C=mega kernel

**4.The process of efficiently queueing tasks is known as....**

A=Optimizing

B=Scheduling

## **Questions for Self Practice**

⇒ Explain the main purpose of an operating system?